# SOP # 6.5.1.1.13 GNSS Tide Buoy Health Monitoring

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1) **Title: GNSS Tide Buoy Health Monitoring During Deployment**

2) **Purpose:** To monitor the transmitted buoy health metrics to ensure the GNSS tide buoy is remaining on station, has sufficient battery voltage, is measuring good position data, and is not flooding.

3) **Background/History:** The GNSS tide buoy was recently transitioned from OCS to CO-OPS and after a period of familiarization was declared fully operational.

   CO-OPS continues to work with OCS to define recommended deployment locations based on VDatum requirements and local conditions. The water level data collected will help validate and tune the Ellipsoid Referenced Tidal Datum Model (ERTDM) used by the hydrographic survey for tide correction and may also improve the tide prediction, tidal current prediction, and VDatum model providing a better understanding of the tides in the deployment region.

   The buoy is generally deployed for a month or longer in remote locations. During periods of deployment, it is essential to monitor the health metrics transmitted by the buoy to ensure it is acquiring usable data and that the buoy is on station.

   To this end, ISD developed the CO-OPS GNSS Tide Buoy Health Monitoring Report which displays relevant information for periodic monitoring. The tool allows for tracking of battery voltage, water intrusion, and location

4) **Scope/Applicability:** This SOP primarily applies to CORMS, DMAT, and the Instrument Labs. CORMS will be responsible for performing the described procedure with oversight from DMAT and the Instrument Labs will be responsible for coordinating any necessary action with the deploying platform which will typically be a NOAA ship.

5) **Main Processes:** During periods of deployment, CORMS will monitor the buoy health using the CO-OPS GNSS Tide Buoy Report and will notify the responsible Instrument Lab in the event that any anomalies are identified. The Instrument Lab will then reach out to the deploying platform, typically a NOAA ship, to address the issue.

6) **Detailed Sub-Processes/Checklists:** A detailed description of the process is below:

**GNSS Tide Buoy Health Monitoring:**

1. The responsible Instrument Lab will notify CORMS and DMAT within 24-hours after the buoy has been deployed to alert them that monitoring should begin. They will also provide the contact information for the Field Operations Officer (FOO) aboard the deploying platform.

2. While the buoy is deployed, CORMS logs into the Tide Buoy Health Report site and checks the health metrics every two (2) hours.

   https://intranet.co-ops.nos.noaa.gov/apps/cdis/gnss/web/tidebuoy/

   a. CORMS will check to ensure that the most recent health data table update received was timestamped within the past two (2) hours.
   b. CORMS will also check to ensure that there are no red highlighted updates in either the Health Data or Outside Watch Circle tables within the past four (4) hours.

3. If any anomalies are found CORMS sends an email to SIL, CIL, the FOO, DMAT, and Ingestion alerting them to the issue with the info from the Message column of the table.

4. SIL or CIL will then coordinate with the deploying platform to address the issue.

5. SIL or CIL will alert CORMS and DMAT with 24-hours after the buoy has been recovered to alert them that monitoring can stop.

6. This completes the procedure.

7) **Quality Assurance/Control:** N/A

8) **Management/Responsibility:** DMAT and Instrument Lab leads shall ensure this procedure is followed during operational buoy deployments. If any problems are encountered, please contact the team leads via their team list serves (DMAT@noaa.gov, SIL@noaa.gov, CIL@noaa.gov, or nos.coops.ingestion@noaa.gov respectively) for further assistance.